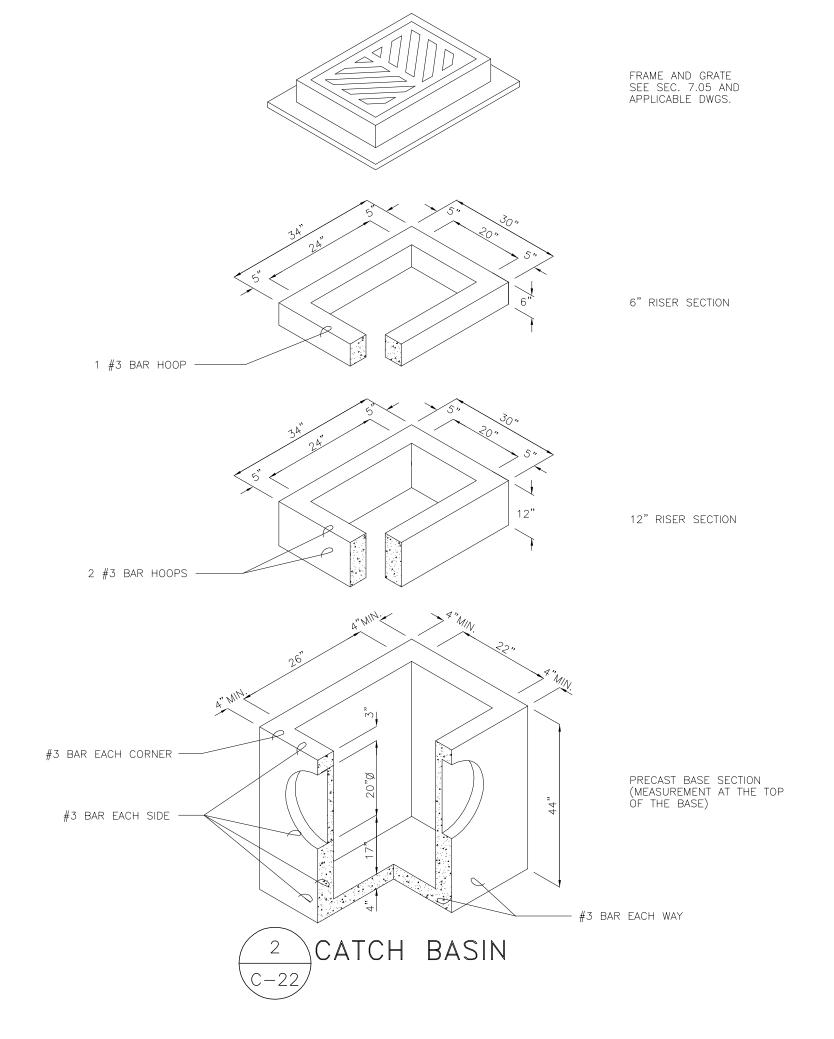
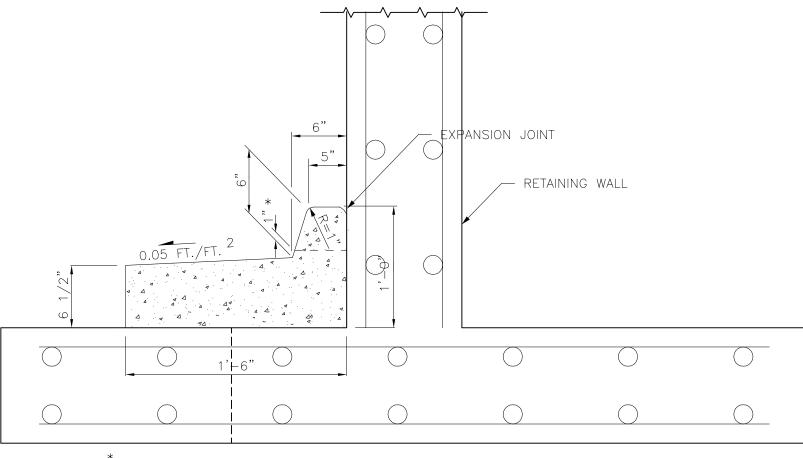


- 1. MANHOLES SHALL BE CONSTRUCTED IN ACCORDANCE WITH AASHTO M199 UNLESS OTHERWISE SHOWN ON PLANS OR NOTED IN THE WSDOT/APWA STANDARD SPECIFICATIONS.
- 2. HANDHOLDS IN ADJUSTMENT SECTION SHALL HAVE 3" MIN. CLEARANCE. STEPS IN MANHOLE SHALL HAVE 6" MIN. CLEARANCE. HANDHOLDS SHALL BE PLACED IN ALTERNATING GRADE RINGS OR LEVELING BRICK COURSE WITH A MIN. OF ONE HANDHOLD BETWEEN THE LAST STEP AND THE TOP OF THE MANHOLE.
- 3. PROPRIETARY MANHOLE HANDHOLDS AND STEPS ARE ACCEPTABLE, PROVIDED THAT THEY CONFORM TO SEC. R, ASTM C478, AASHTO M199 AND MEET ALL WISHA REQUIREMENTS.
- 4 MANHOLE STEP/HANDHOLD LEGS SHALL BE PARALLEL OR APPROXIMATELY RADIAL AT THE OPTION OF THE MANUFACTURER, EXCEPT THAT ALL STEPS IN ANY MANHOLE SHALL BE SIMILAR. PENETRATION OF OUTER WALL BY A LEG IS PROHIBITED.
- 5 HANDHOLDS AND STOPS SHALL HAVE "DROP" RUNGS OR PROTUBERANCES TO PREVENT SIDEWAYS SLIP.
- 6. LADDERS OR STEPS SHALL EXTEND TO WITHIN 16" OF BOTTOM OF MANHOLE.
- 7. ALL REINFORCED CAST-IN-PLACE CONCRETE SHALL BE CLASS 4000. NON-REINFORCED CONCRETE IN CHANNEL AND SHELF SHALL BE CLASS 3000. ALL PRECAST CONCRETE SHALL BE CLASS 4000.
- PRECAST BASES SHALL BE FURNISHED WITH CUTOUTS OR KNOCKOUTS. KNOCKOUTS SHALL HAVE WALL THICKNESS OF 2" MIN. UNUSED KNOCKOUTS NEED NOT BE GROUTED IF WALL IS LEFT INTACT. PIPES SHALL BE INSTALLED ONLY IN FACTORY KNOCKOUTS UNLESS OTHERWISE APPROVED BY THE ENGINEER.
- 9. KNOCKOUT OR CUTOUT HOLE SIZE SHALL EQUAL PIPE OUTER DIAM. PLUS MANHOLE WALL THICKNESS. MAX. HOLE SIZE SHALL BE 36" FOR 48" M.H., 42" FOR 54" M.H., 48" FOR 60" M.H., 60" FOR 72" M.H., 84" FOR 96" M.H. MIN. DISTANCE BETWEEN HOLES SHALL BE 8" FOR 48", 54", AND 60" M.H., 12" FOR 72" AND 96" M.H.
- MANHOLE RINGS AND COVERS SHALL BE IN ACCORDANCE WITH SEC. 7.05 AND MEET THE STRENGTH REQUIREMENTS OF FEDERAL SPECIFICATION RR-F-621D. MATING SURFACES SHALL BE FINISHED TO ASSURE NON-ROCKING FIT WITH ANY COVER POSITION.
- 11. ALL BASE REINFORCING STEEL SHALL HAVE A MIN. YIELD STRENGTH OF 60,000 PSI AND BE PLACED IN THE UPPER HALF OF THE BASE WITH 1" MIN. CLEARANCE.
- 12. FOR HEIGHTS OF 12' OR LESS, MIN. SOIL BEARING VALUE SHALL EQUAL 3,300 POUNDS PER SQUARE FOOT. FOR HEIGHTS OVER 12', MIN. SOIL BEARING VALUE SHALL EQUAL 3,800 POUNDS PER SQUARE FOOT.
- SEE THE WSDOT/APWA STANDARD SPECIFICATIONS SEC. 7-05.3 FOR JOINT REQUIREMENTS.

CATCH BASIN:

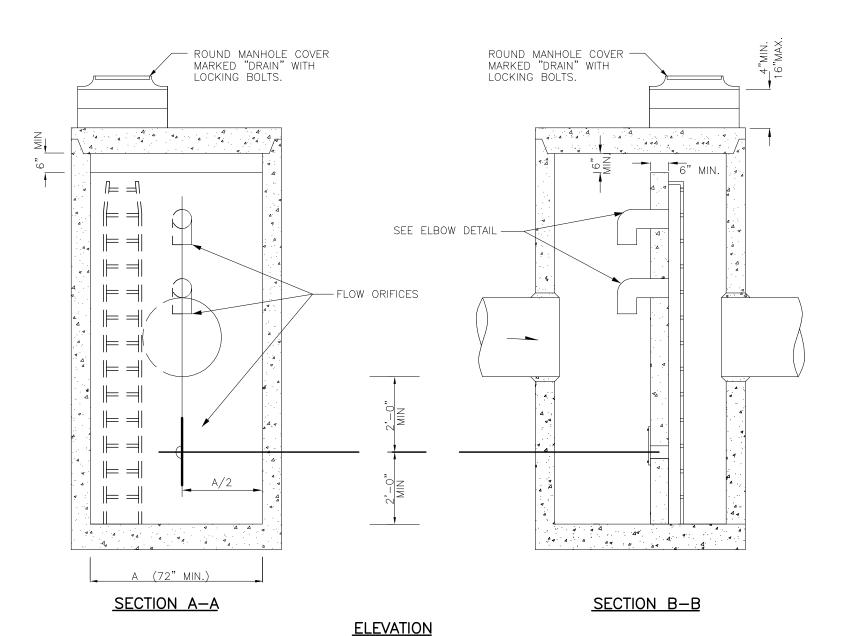
- 1. CATCH BASINS SHALL BE CONSTRUCTED IN ACCORDANCE WITH ASTM C478 (AASHTO M 199) & C890 UNLESS OTHERWISE SHOWN ON PLANS OR NOTED IN THE WSDOT/APWA STANDARD SPECIFICATIONS.
- AS AN ACCEPTABLE ALTERNATIVE TO REBAR, WELDED WIRE FABRIC HAVING A MIN. AREA OF 0.12 SQUARE INCHES PER FOOT MAY BE USED. WELDED WIRE FABRIC SHALL OMPLY 10 ASIM A497 (AASHIO M 221). SHALL NOT BE PLACED IN KNOCKOUTS.
- 3. ALL REINFORCED CAST-IN-PLACE CONCRETE SHALL BE CLASS 4000.
- 4. PRECAST BASES SHALL BE FURNISHED WITH CUTOUTS OR KNOCKOUTS. KNOCKOUTS SHALL HAVE A WALL THICKNESS OF 2" MIN. ALL PIPE SHALL BE INSTALLED IN FACTORY PROVIDED KNOCKOUTS. UNUSED KNOCKOUTS NEED NOT BE GROUTED IF WALL IS LEFT INTACT.
- 5. KNOCKOUT OR CUTOUT HOLE SIZE IS EQUAL TO PIPE OUTER DIAM. PLUS CATCH BASIN WALL THICKNESS.
- 6. ROUND KNOCKOUTS MAY BE ON ALL 4 SIDES, WITH MAX. DIAM. OF 20". KNOCKOUTS MAY BE EITHER ROUND OR "D" SHAPE.
- 7. THE MAX. DEPTH FROM THE FINISHED GRADE TO THE PIPE INVERT IS 5'-0".
- 8. THE TAPER ON THE SIDES OF THE PRECAST BASE SECTION AND RISER SECTION SHALL NOT EXCEED 1/2"/FT.
- 9. CATCH BASIN FRAME AND GRATE SHALL BE IN ACCORDANCE WITH STANDARD SPECIFICATIONS AND MEET THE STRENGTH REQUIREMENTS OF FEDERAL SPECIFICATION RR-F-62ID. MATING SURFACES SHALL BE FINISHED TO ASSURE NON-ROCKING FIT WITH ANY COVER POSITION.
- 10. FRAME AND GRATE MAY BE INSTALLED WITH FLANGE DOWN OR CAST INTO RISER.
- 11. EDGE OF RISER OR BRICK SHALL NOT BE MORE THAN 2" FROM VERTICAL EDGE OF CATCH BASIN WALL.

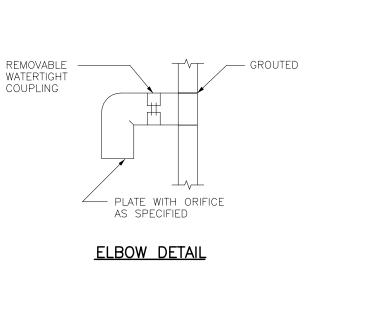


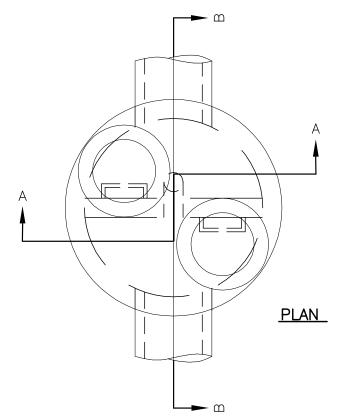


* NOTE: TOP OF LIP AT DRIVEWAYS. CEMENT CONCRETE CURB & GUTTER











FLOW RESTRICTOR / OIL POLLUTION CONTROL DEVICE, BAFFLE TYPE (FROP-B):

- 1. PIPE SIZE, SLOPES AND ALL ELEVATIONS: PER PLANS.
- 2. OUTLET CAPACITY: NOT LESS THAN COMBINED INLETS.
- 3. CATCH BASIN: TYPE 2, TO BE CONSTRUCTED IN ACCORDANCE WITH DWG. NO. 2-005 AND AASHTO M199 UNLESS OTHERWISE
- 4. COVERS: ROUND, SOLID MARKED "DRAIN," WITH LOCKING BOLTS SEE DWG. NO. 2-022 & 2-023.
- 5. ORIFICES: SIZED AND LOCATED AS REQUIRED, WITH LOWEST ORIFICE MIN. 2' FROM BASE.
- 6. BAFFLE WALL SHALL HAVE #4 BAR AT 12" SPACING EACH WAY.
- 7. PRECAST BAFFLE WALL SHALL BE KEYED AND GROUTED IN PLACE.
- 8. BOTTOM ORIFICE PLATE TO BE 1/4" MIN. GALVANIZED STEEL AND ATTACHED WITH 1/2" STAINLESS STEEL BOLTS. OMIT ORIFICE PLATE IF ONLY FOR OIL SEPARATION.
- 9. UPPER FLOW ORIFICE SHALL BE ALUMINUM, ALUMINIZED STEEL OR GALVANIZED STEEL. SEE DWG. NO. 2-025. GALVANIZED STEEL SHALL HAVE TREATMENT 1.

KING COUNTY STANDARDS, 2005

DRAFT BID SET

THE BNSF RAILWAY COMPANY SKYKOMISH, WASHINGTON BN050-19390-200

URRENT DATE 2/--/06

SKYKOMISH LEVEE REMEDIATION

FINAL DETAILS SHEET 1 OF 2

RCW 2/--/06 ISSUED FOR PRELIMINARY BID A.S. 1/13/06 60% DRAWINGS - NOT FOR CONSTRUCTION J.S. | 1/13/06 CHKD DATE | APPVD | DATE DRWN DATE REVISION

PRAWING NO. C-27 REVISION | **B**